

WHAT IS CLAIMED IS:

1. An optical scanning device comprising:

a first optical system, including a light source, for directing a light beam emitted from the light source to deflection means; and

a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area,

wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area.

2. An optical scanning device according to claim 1, wherein a scanning efficiency of the optical scanning device is 70% or higher.

3. An optical scanning device according to claim 1, wherein the light beam from said first optical system is

incident at an oblique angle on a deflection surface of the deflection means in a sub scanning cross-sectional plane.

4. An image forming apparatus comprising:

an optical scanning device including a first optical system, including a light source, for directing a light beam emitted from the light source to deflection means, and a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area, wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area;

a photoconductive body arranged on the scanning surface of said optical scanning device;

a development means for developing, into a toner image, an electrostatic latent image that has been formed with the light beam scanning said photoconductive body;

a transfer means for transferring the developed toner

image onto a paper sheet; and

a fixing means for fixing the transferred toner image onto the paper sheet.

5. An image forming apparatus comprising:

an optical scanning device including a first optical system, including a light source, for directing a light beam emitted from the light source to deflection means, and a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area, wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area; and

a printer controller for converting code data input from an external device into an image signal and feeding the image signal to said optical scanning device.

6. An image forming apparatus according to one of

claims 4 and 5, wherein the image is formed through a Background Area Exposure process.

7. An optical scanning device comprising:

a first optical system, including a light source, for directing a light beam emitted from the light source to a deflection surface of deflection means in a beam width wider than the width of the deflection surface in a main scan direction; and

a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area,

wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area.

8. An optical scanning device according to claim 7, wherein a scanning efficiency of the optical scanning device is 80% or higher.

9. An optical scanning device according to claim 7, wherein the light beam from said first optical system is incident at an oblique angle on a deflection surface of the deflection means in a sub scanning cross-sectional plane.

10. An image forming apparatus comprising an optical scanning device including a first optical system, including a light source, for directing a light beam emitted from the light source to a deflection surface of deflection means in a beam width wider than the width of the deflection surface in a main scan direction, and a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area, wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area, and

wherein the width of a border area between adjacent deflection surfaces of the deflection means in a main scan

direction is 1% or less of the width of each deflection surface in the main scan direction.

11. An image forming apparatus comprising an optical scanning device including a first optical system, including a light source, for directing a light beam emitted from the light source to a deflection surface of deflection means in a beam width wider than the width of the deflection surface in a main scan direction, and a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area, wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area, and

wherein in a border area between adjacent deflection surfaces of the deflection means, one deflection surface extends over the other deflection surface, and the length of the extension in a main scan direction is 5% or less of the beam width of the light beam reflected and deflected from

the deflection surface in the main scan direction.

12. An image forming apparatus comprising:

an optical scanning device including a first optical system, including a light source, for directing a light beam emitted from the light source to a deflection surface of deflection means in a beam width wider than the width of the deflection surface in a main scan direction, and a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area, wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area;

a photoconductive body arranged on the scanning surface of said optical scanning device;

a development means for developing, into a toner image, an electrostatic latent image that has been formed with the light beam scanning said photoconductive body;

a transfer means for transferring the developed toner image onto a paper sheet; and

a fixing means for fixing the transferred toner image onto the paper sheet.

13. An image forming apparatus comprising:

an optical scanning device including a first optical system, including a light source, for directing a light beam emitted from the light source to a deflection surface of deflection means in a beam width wider than the width of the deflection surface in a main scan direction, and a second optical system for focusing the light beam, reflected and deflected by the deflection means, on an effective scanning area of a scanning surface, thereby scanning a plurality of lines on the effective scanning area, wherein the light source remains lit during a period of time between the scanning of each of the plurality of lines on the effective scanning area and wherein a light shield member is positioned between the deflection means and the scanning surface to block at least a portion of the light beam emitted during the period of time between the scanning of each of the plurality of lines on the effective scanning area; and

a printer controller for converting code data input from an external device into an image signal and feeding the



image signal to said optical scanning device.

14. An image forming apparatus according to one of claims 12 and 13, wherein the image is formed through a Background Area Exposure process.

Patented Feb. 22, 1960